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**Benjamin**

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(54) **PIEZOELECTRIC VOLUMETRIC ARRAY**

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310/337, 366; 367/155, 164

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(57) **ABSTRACT**

A three-dimensional array of acoustic sensors. The array can be used for both the transmission and reception of acoustic signals. The array comprises electroplated piezoelectric polymer layers that are laminated with a non-conductive epoxy to form individual multi-layer array transducer elements. Circuit support layer layers are incorporated between the multi-layer array transducer elements. Because of the three-dimensional configuration of the array, logical transducers can be created from multiple transducer elements, and transmission and reception of acoustic signals in any direction can be realized.

19 Claims, 9 Drawing Sheets

